

What is claimed is:

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*acc* 1. A molten-salt type catalyst for purifying particulate materials, which are contained in an exhaust gas emitted from an internal combustion engine and contain carbon, and said catalyst comprising:

a solid support; and

a catalytic ingredient loaded on the solid support including at least one member selected from the group consisting of silver nitrate, alkali metal nitrate, alkaline-earth metal nitrate and rare-earth nitrate.

2. The molten-salt type catalyst according to claim 1, wherein said solid support is a basic support.

3. The molten-salt type catalyst according to claim 1, wherein said catalytic ingredient includes alkali metal nitrate.

4. The molten-salt type catalyst according to claim 1, wherein said catalytic ingredient further includes an oxidation facilitating ingredient.

5. The molten-salt type catalyst according to claim 1, wherein said solid support includes at least one member selected from the group consisting of alumina, zirconia, titania, silica and zeolite.

6. The molten-salt type catalyst according to claim 2, wherein said basic support includes at least one member selected from the

group consisting of magnesia spinel, zirconia, alkali metal oxide, alkaline-earth metal oxide and rare-earth oxide.

7. The molten-salt type catalyst according to claim 6, wherein said alkaline-earth metal oxide is magnesia.

8. The molten-salt type catalyst according to claim 6, wherein said rare-earth metal oxide is at least one member selected from the group consisting of lanthanum oxide and neodymium oxide.

9. The molten-salt type catalyst according to claim 1, wherein said alkali metal nitrate is at least one member selected from the group consisting of  $\text{KNO}_3$ ,  $\text{CsNO}_3$ ,  $\text{NaNO}_3$  and  $\text{LiNO}_3$ .

10. The molten-salt type catalyst according to claim 1, wherein said alkaline-earth metal nitrate is at least one member selected from the group consisting of  $\text{Ba}(\text{NO}_3)_2$ ,  $\text{Sr}(\text{NO}_3)_2$ ,  $\text{Ca}(\text{NO}_3)_2$  and  $\text{Mg}(\text{NO}_3)_2$ .

11. The molten-salt type catalyst according to claim 1, wherein said rare-earth nitrate is at least one member selected from the group consisting of  $\text{Y}_2(\text{NO}_3)_3$ ,  $\text{La}_2(\text{NO}_3)_3$ ,  $\text{Nd}_2(\text{NO}_3)_3$  and  $\text{Pr}_2(\text{NO}_3)_3$ .

12. The molten-salt type catalyst according to claim 1, wherein said catalytic ingredient is composite nitrate.

13. The molten-salt type catalyst according to claim 12, wherein said composite nitrate is at least one member selected from the group consisting of  $\text{AgNO}_3$ - $\text{CsNO}_3$ ,  $\text{CsNO}_3$ - $\text{KNO}_3$ ,  $\text{CsNO}_3$ - $\text{NaNO}_3$ ,  $\text{CsNO}_3$ - $\text{LiNO}_3$ ,

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$\text{KNO}_3\text{-Mg}(\text{NO}_3)_2$ ,  $\text{LiNO}_3\text{-NaNO}_3$ ,  $\text{NaNO}_3\text{-Ca}(\text{NO}_3)_2$ ,  $\text{NaNO}_3\text{-Mg}(\text{NO}_3)_2$ ,  $\text{AgNO}_3\text{-KNO}_3\text{-NaNO}_3$ ,  $\text{AgNO}_3\text{-NaNO}_3\text{-Ba}(\text{NO}_3)_2$ ,  $\text{KNO}_3\text{-LiNO}_3\text{-NaNO}_3$ ,  $\text{KNO}_3\text{-NaNO}_3\text{-Mg}(\text{NO}_3)_2$ ,  $\text{KNO}_3\text{-Ba}(\text{NO}_3)_2\text{-Ca}(\text{NO}_3)_2$ ,  $\text{KNO}_3\text{-Ba}(\text{NO}_3)_2\text{-Sr}(\text{NO}_3)_2$ ,  $\text{KNO}_3\text{-Ca}(\text{NO}_3)_2\text{-Sr}(\text{NO}_3)_2$ ,  $\text{LiNO}_3\text{-NaNO}_3\text{-Ca}(\text{NO}_3)_2$ ,  $\text{NaNO}_3\text{-Ca}(\text{NO}_3)_2\text{-Mg}(\text{NO}_3)_2$ ,  $\text{NaNO}_3\text{-Ca}(\text{NO}_3)_2\text{-Sr}(\text{NO}_3)_2$  and  $\text{KNO}_3\text{-NaNO}_3\text{-Ca}(\text{NO}_3)_2\text{-Mg}(\text{NO}_3)_2$ .

14. The molten-salt type catalyst according to claim 1, wherein said catalytic ingredient includes alkali metal nitrate.

15. The molten-salt type catalyst according to claim 14, wherein said alkali metal includes  $\text{LiNO}_3$  at least.

16. The molten-salt type catalyst according to claim 1, wherein a loading amount of said catalytic ingredient falls in a range of from 1 to less than 120 parts by weight with respect to 100 parts by weight of said solid support.

17. The molten-salt type catalyst according to claim 4, wherein said oxidation facilitating ingredient is at least one member selected from the group consisting of noble metal and oxide.

18. The molten-metal type catalyst according to claim 17, wherein said noble metal is at least one member selected from the group consisting of Pt, Pd and Rh.

19. The molten-metal type catalyst according to claim 17, wherein said oxide is at least one member selected from the group consisting of  $\text{CeO}_2$ ,  $\text{ZrO}_2$ ,  $\text{CeO}_2\text{-ZrO}_2$  solid solutions,  $\text{BaO}$ ,  $\text{CaO}$ ,  $\text{V}_2\text{O}_5$ ,  $\text{ZnO}$ ,  $\text{WO}_3$ ,

$\text{MoO}_3$ ,  $\text{NiO}$ ,  $\text{FeO}$ ,  $\text{Fe}_3\text{O}_4$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{MnO}_2$ ,  $\text{Cr}_2\text{O}_3$ ,  $\text{CuO}$ ,  $\text{CoO}$  and  $\text{Co}_3\text{O}_4$ .

20. The molten-salt type catalyst according to claim 17, wherein a loading amount of said noble metal falls in a range of from 0.1 to 10 parts by weight with respect to 100 parts by weight of said solid support.

21. The molten-salt type catalyst according to claim 17, wherein a loading amount of said metal oxide falls in a range of from 1 to 50 parts by weight with respect to 100 parts by weight of said solid support.

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